REMARKS

The Examiner has acknowledged Applicant's election without traverse of the species "a non-genetic therapeutic agent", the species "a metallic stent", and the species "angiogenic agent", for prosecution in the present application. Additionally, the Examiner has withdrawn claims 2, 4-8, 13-16, 21-23, 25, 28-29, 31, 40-41, 45, 46, 48-49 from consideration as being drawn to a non-elected species. Claims 52-59 have been entered and examined on the merits. Claims 9, 30, 32, 33, 39, 53 and 57 have been canceled without prejudice.

Claims 1, 25, 26, and 49-51 have been amended to more particularly point out and distinctly claim the subject matter which the applicant regards as her invention.

Claims : 1, 3, 10-12, 17-20, 23-27, 34-36, 38, 42-44, 47-52, 54-56 and 58-59 are pending and read on the elected species. No new matter has been added by the foregoing amendments.

Pursuant to 37 CFR 1.78(a)(2)(ii)(B), applicant has amended the specification to claim the benefit of the prior-filed copending nonprovisional application U.S. Ser. No. 09/204,254, filed December 3, 1998 now U.S. Patent No. 6,369,039 B1.

Formal Matters

The Examiner objects to claims 1, 9, 26, 32-33, 39, 53, and 57 as being reading on a non-elected species.

With respect to independent claims 1 and 26: Applicant has amended claims 1 and 26 to be drawn to the elected species "a non-genetic therapeutic agent", the species "a metallic stent", and the species "angiogenic agent" for both the first and second therapeutic agents.

With respect to claims 9, 32, 33, 39, 53 and 57: Claim 9, 32, 33, 39, 53 and 57 are canceled without prejudice.

The Examiner has indicated that claims 23 and 25 are withdrawn from consideration as reading on a non-elected species. Applicant respectfully disagrees and asserts that these claims read on the elected species "a non-genetic therapeutic agent", the species "a metallic stent", and the species "angiogenic agent" for both the first and second therapeutic agents. Examination on the merits thereof is respectfully

requested.

Rejection of claim 30 under 35 U.S.C. § 112, Second Paragraph

The Examiner has rejected claim 30 under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. The Examiner states that there is insufficient antecedent basis for the claim limitation, "said non-plasmid vector". Applicant has canceled claim 30 without prejudice. Withdrawal of this rejection is respectfully requested.

Rejection of claims 1, 9-12, 17, 19, 20, 24, 26, 32-37, 39, 42, 44, 47, 50-59 under 35 U.S.C. § 102(b)

The Examiner rejects claims 1, 9-12, 17, 19, 20, 24, 26, 32-37, 39, 42, 44, 47, 50-59 under 35 U.S.C. § 102(b), as allegedly being anticipated by Donovan et al., US Patent No. 5,833,651. The Examiner alleges that Donovan teaches a medical device comprising a stent having a polymer composition, to deliver a virus capable of expressing a protein in a cell, to the wall of a lumen for gene delivery. Additionally, the Examiner alleges that a liposome can be incorporated into the polymer-coated stent. The Examiner suggests that the medical device taught by Donovan also teaches a second biodegradable polymer coating covering at least a portion of the first coating on the lumen wall contacting surface and that the second coating can comprise an anti-inflammatory compound.

Applicants respectfully disagree that Donovan anticipates the claimed invention. However, in order to expedite prosecution, Applicant has amended independent claim 1 to recite a medical device comprising a biocompatible structure carrying a genetic material, the biocompatible structure comprising a polymeric coating that coats at least a portion of the structure, the genetic material comprising a first therapeutic agent comprising a vector containing a first polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by the first polynucleotide, wherein the first polynucleotide encodes an angiogenic agent; and a second therapeutic agent comprising a non-genetic therapeutic agent, wherein the non-genetic therapeutic agent is an angiogenic agent.

Additionally, amended independent claim 26 now recites a method of controlled delivery of a genetic material to a mammalian body comprising applying a polymer

coating to at least a portion of a medical device; applying a genetic material to the polymer coating to obtain a genetically coated medical device, the genetic material comprising a first therapeutic agent comprising a vector containing a first polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by the first polynucleotide, wherein said first polynucleotide encodes an angiogenic agent; and a second therapeutic agent comprising a non-genetic therapeutic agent, wherein said non-genetic therapeutic agent is an angiogenic agent; inserting or implanting said genetically coated medical device at a predetermined site in said mammal.

Donovan does not teach any medical device or method that establishes gene expression sufficient to produce a therapeutically sufficient amount of an angiogenic agent either alone or in combination with a second non-genetic therapeutic angiogenic agent. In particular, Donovan does not disclose a device that comprises both "a polynucleotide encod[ing] an angiogenic agent" and a "non-genetic therapeutic agent" that is "an angigenic agent," as required by all the present claims. As such, Applicant respectfully requests withdrawal of this rejection.

Rejection of claims 1, 9-12, 17, 19, 20, 24, 26, 32-38, 42, 44, 47, 50-59 under 35 U.S.C. § 102(e)

The Examiner rejects claims 1, 9-12, 17, 19, 20, 24, 26, 32-38, 42, 44, 47, 50-59 under 35 U.S.C. § 102(e), as allegedly being anticipated by Palasis et al., US Patent No. 6,369,039.

Pursuant to 37 CFR 1.78(a)(2)(ii)(B), applicant has amended the specification to claim the benefit of the prior-filed copending nonprovisional application U.S. Ser. No. 09/204,254, filed December 3, 1998 now U.S. Patent No. 6,369,039 B1. As such, Applicant respectfully requests withdrawal of this rejection.

Rejection of claims 1, 3, 26 and 27 under 35 U.S.C. § 103(a)

The Examiner rejects claims 1, 3, 26 and 27 under 35 U.S.C. § 103(a), as allegedly being unpatentably obvious over Donovan et al, US Patent No. 5,833,651 in view of Branellec et al., US Patent No. 5,851,521. The Examiner alleges that Donovan teaches a device for delivering a virus to a lumen wall for gene delivery and that such a

device may comprise a metallic stent coated with polymer containing an anti-inflammatory compound. The Examiner concedes that Donovan does not teach the use of use of an adenoassociated virus vector (AAV). The Examiner further states that this shortcoming is overcome by Branellec et al. which supposedly teaches AAVs as a known mechanism for delivery of therapeutic nucleic acids.

Applicants respectfully disagree that Donovan renders the claimed invention unpatentably obvious. However, in order to expedite prosecution, Applicant has amended independent claim 1 to recite a medical device comprising a biocompatible structure carrying a genetic material, the biocompatible structure comprising a polymeric coating that coats at least a portion of the structure, the genetic material comprising a first therapeutic agent comprising a vector containing a first polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by the first polynucleotide, wherein the first polynucleotide encodes an angiogenic agent; and a second therapeutic agent comprising a non-genetic therapeutic agent, wherein the non-genetic therapeutic agent is an angiogenic agent.

Additionally, amended independent claim 26 now recites a method of controlled delivery of a genetic material to a mammalian body comprising applying a polymer coating to at least a portion of a medical device; applying a genetic material to the polymer coating to obtain a genetically coated medical device, the genetic material comprising a first therapeutic agent comprising a vector containing a first polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by the first polynucleotide, wherein said first polynucleotide encodes an angiogenic agent; and a second therapeutic agent comprising a non-genetic therapeutic agent, wherein said non-genetic therapeutic agent is an angiogenic agent; inserting or implanting said genetically coated medical device at a predetermined site in said mammal.

As indicated *supra*, Donovan does not teach any medical device or method that establishes gene expression sufficient to produce a therapeutically sufficient amount of an angiogenic agent either alone or in combination with a second non-genetic therapeutic angiogenic agent. Accordingly, Branellec et al.'s alleged disclosure of AAVs as a known mechanism for delivery of therapeutic nucleic acids cannot overcome

the shortcomings of Donovan with respect independent claims 1 and 26 or dependent claims 3 and 27. As such, Applicant respectfully requests withdrawal of this rejection.

Rejection of claims 1, 18, 26 and 43 under 35 U.S.C. § 103(a)

The Examiner rejects claims 1, 18, 26 and 43 under 35 U.S.C. § 103(a), as allegedly being unpatentably obvious over Donovan et al, US Patent No. 5,833,651 in view of Lennox et al., US Patent No. 6,280,411. The Examiner alleges that Donovan teaches a device for delivering a virus to a lumen wall for gene delivery and that such a device may comprise a metallic stent coated with polymer containing an anti-inflammatory compound. The Examiner concedes that Donovan does not teach a medical device wherein the polymer coating is about 1 to about 40 layers having a thickness of about 1 to about 10 microns/layer of coating or using such a device to deliver a nucleic acid and a non-genetic agent to a cell. The Examiner further states that these shortcomings are overcome by Lennox et al. which supposedly teaches a medical device coated with polymer having a thickness of about 1 to 10 microns having multiple layers.

Applicants respectfully disagree that Donovan renders the claimed invention unpatentably obvious. However, in order to expedite prosecution, Applicant has amended independent claim 1 to recite a medical device comprising a biocompatible structure carrying a genetic material, the biocompatible structure comprising a polymeric coating that coats at least a portion of the structure, the genetic material comprising a first therapeutic agent comprising a vector containing a first polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by the first polynucleotide, wherein the first polynucleotide encodes an angiogenic agent; and a second therapeutic agent comprising a non-genetic therapeutic agent, wherein the non-genetic therapeutic agent is an angiogenic agent.

Additionally, amended independent claim 26 now recites a method of controlled delivery of a genetic material to a mammalian body comprising applying a polymer coating to at least a portion of a medical device; applying a genetic material to the polymer coating to obtain a genetically coated medical device, the genetic material comprising a first therapeutic agent comprising a vector containing a first

polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by the first polynucleotide, wherein said first polynucleotide encodes an angiogenic agent; and a second therapeutic agent comprising a non-genetic therapeutic agent, wherein said non-genetic therapeutic agent is an angiogenic agent; inserting or implanting said genetically coated medical device at a predetermined site in said mammal.

Once again, as indicated *supra*, Donovan does not teach any medical device or method that establishes gene expression sufficient to produce a therapeutically sufficient amount of an angiogenic agent either alone or in combination with a second non-genetic therapeutic angiogenic agent. Accordingly, Lennox et al.'s alleged disclosure of a medical device coated with polymer having a having a thickness of about 1 to 10 microns with multiple coating layers cannot overcome the shortcomings of Donovan with respect independent claims 1 and 26 or dependent claims 18 and 43. As such, Applicant respectfully requests withdrawal of this rejection.

CONCLUSION

If any extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 11-0600. If there the Examiner has any questions or concerns, he is invited to call the undersigned.

Respectfully submitted,
KENYON & KENYON

March 17, 2003
Date

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

On page 1, below the Title and above the Field of the Invention, please insert the following:

-- This application is a Continuation-in-Part of U.S. Ser. No. 09/204,254, filed December 3, 1998 now U.S. Patent No. 6,369,039 B1.--

In the Claims:

Please cancel claims 9, 32, 33, 39, 53 and 57 without prejudice.

1. A medical device comprising:
a biocompatible structure carrying a genetic material, said biocompatible structure comprising a polymeric coating that coats at least a portion of said structure, said genetic material comprising:
(a) a first therapeutic agent comprising a vector containing a first polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by said first polynucleotide, wherein said first polynucleotide encodes an angiogenic agent; and
(b) a second therapeutic agent comprising [at least one of (i) a second polynucleotide carried by a carrier; (ii) a protein; (iii)] a non-genetic therapeutic agent, wherein said non-genetic therapeutic agent is an angiogenic agent. [, or (iv) cells.]

25. The method of claim [23] 24, wherein said site is a site of mechanical injury to an arterial wall produced by treatment of an atherosclerotic lesion by angioplasty.

26. A method of controlled delivery of a genetic material to a mammalian body comprising;
(A) applying a polymer coating to at least a portion of a medical device;
(B) applying a genetic material to said polymer coating to obtain a genetically coated medical device, said genetic material comprising: (a) a first therapeutic agent comprising a vector containing a first polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by said first polynucleotide, wherein said first polynucleotide encodes an angiogenic agent; and (b) a second therapeutic agent comprising [at least one of (i) a second polynucleotide carried by a carrier; (ii) a protein; (iii)] a non-genetic therapeutic agent, wherein said non-genetic therapeutic agent is an angiogenic agent[; or (iv) cells]; and
(C) inserting or implanting said genetically coated medical device at a predetermined site in said mammal.

49. The method of claim 26, wherein said non-genetic therapeutic agent is a protein.

50. The method of claim 26, wherein said non-genetic therapeutic agent is a small molecule.

51. The method of claim 26, wherein said non-genetic therapeutic agent is a non-protein based agent.